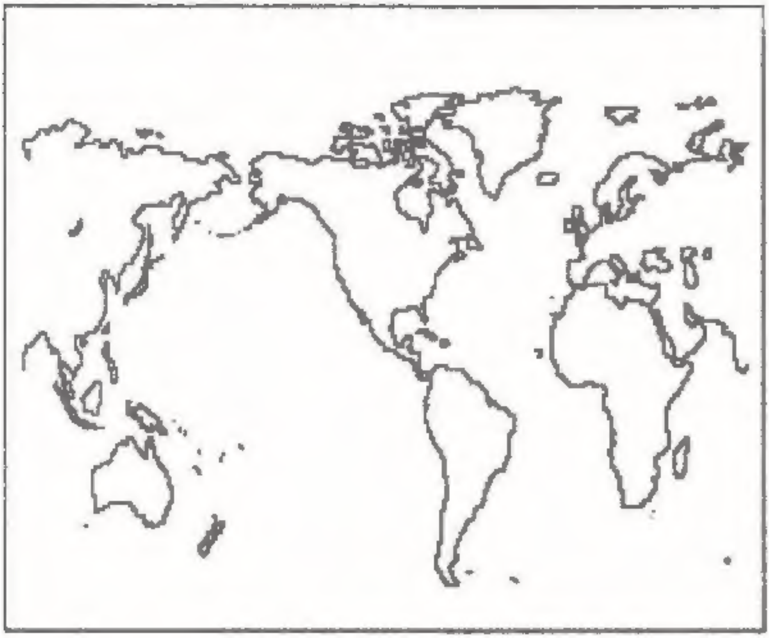
OTTAWA HOME COMPUTING

December, 1984 Vol.1 No.6 $1.60

INSIDE ...



OTTAWA HOME COMPUTING

December, 1984 Vol.1 No.6

OTTAWA HOME COMPUTING is the newsletter of the Ottawa Home Computer Club. Membership is open to all with a genuine interest in personal computing for $15/year in Canada. Membership includes OTTAWA HOME COMPUTING. Meetings are usually held on the third Monday of each month, 7:30 PM, at Charlebois High School, corner of Heron Road and Alta Vista Drive in Ottawa.

When submitting articles please print or type with a fresh ribbon, 8-1/2 x 11 inch white paper, double-spaced on one side only. Leave one-and-a-half inch borders on all four sides.

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EDITORIAL

by Paul Irwin

This is the last issue of Ottawa Home Computing for 1984 as Issue Six. So far, I managed to get out each issue, more or less on time. Looking back over these first six, I see myself learning how to edit a newsletter. Scrounging articles, doing the layout, and arranging for the printing are all tasks that must be done in addition to editing. I began by having the printer typeset and pasteup Issue One. Now, I do the typesetting with a Gemini 10-X printer from an Apple. I believe the control of the final appearance is worth it. However, it is a lot of work.

Looking ahead, I would like to involve more people on the production side of this rag. Perhaps some volunteers to key in articles. Perhaps authors could submit justified, 3-inch columns and save us a lot of work. The style is well defined now: bold title, italic byline, and right justified text. With all those word processors this should not be too much to ask.

Regardless of format, articles are always welcome. Please include a phone number, though. Sometimes I need to check a point or two with you. Thanks.

Looking forward to seeing you at our December 17 meeting. From myself and all the executive, Merry Christmas and Happy New Year.

SOFTWARE REVIEW

by Andrew Aitkens

****

Name:	ARCHON
Publish:	Free Fall Associates and Electronic Arts
Computer:	C64, Apple, or Atari with disk & joystick
Price:	$60.00 in Canada

****

Strategy and combat are at the heart of any exciting game from frozen tag to contract bridge. Electronic Arts, together with Free Fall Associates have released a game to challenge your skills in a new world of magic spells, shifting time and place, strange icons, and fierce, elusive power.

The Elements

Taking the structure of chess as a starting point, ARCHON uses a 9x9 grid with five flashing "power point" squares Occupy all five and you win the game. These and a pattern of 28 other squares are further controlled by a "luminosity cycle": they change from black through four intermediate colours to white and black again, every other turn, throughout the game. Your power ebbs and floods with this cycle. Icons of the Light Side are stronger on light squares than on dark ones; conversely, Dark Side icons are stronger on dark squares.

Icons? you ask. No rooks or bishops here! Instead, a whole new cast of players -- Golems to Valkyries - fights your battles. A Djinni for example raises a powerful tornado. A Basilisk projects a deadly eyebeam. An agile Dragon disposes of foes with its flaming breath while the Shapeshifter assumes the form of its opponent for an evenly matched round. Icons move in a given way - ground, flight, or teleport - a certian number of squares. Each side is led by a Mage: the Dark Side by a Sorceress, the Light Side by a Wizard. Fireballs and lightning bolts aside, these powerful figures wield seven magic spells: to revive, to heal, to imprision, to teleport, to shift time, and to summon a temporary free man called an Elemental.

Playing the Game

If all this sounds complicated, it is. Let's look at how a typical game of ARCHON may progress.

Initially, the two sides are lined up on each side of the board, like chessmen. Useing your joystick, you guide a frame to the icon you want to move, press the fire button to select it, move the icon to the new square, then press the fire button again. Your opponent who is either the computer or a friend with a joystick, then takes a similar move. Then, the luminance of the special squares change and you begin the next round.

Initial strategy leads you to move some of your men to light squares if you are of the Light Side. Thus you manage to secure a power position with your Archer; however your Dark Side opponent has other ideas. He moves his Manticore to the same square. Lo, and behold! The board disappears, leaving the Archer and Manticore facing each other in the Combat Arena - a battle to the death for control of that square.

This second screen is what really separates ARCHON from traditional board games, by bringing several new variables into play here. First, there is your joystick skill pitted against your opponent's skill; computers are hard to beat. Next, there is the relative powers of the two icons: some move fast, some slow; some can shoot long distances, some must be close to attack; and the intervals between shots and strikes varies too. Finally, your icon's lifespan and ability to sustain wounds varies with the luminance of the battle square. If you are attacked on a dark square, you are in big trouble. Lifelines at each side of the Combat Arena show your status as you dodge, hide behind barriers, and attack your opponent. May the best icon win!

ARCHON challenges a player's strategy and joystick handling. Here is where I had my only problem with the structure of the game. No matter how clever your strategy, you are ultimately going to win or lose by your performance in the Combat Arena. If you are playing alone, against the computer, this can put you at a substantial disadvantage unless you are a wizard yourself. Two players must be well matched on the stick to get a good game.

You will enjoy the striking visuals such as flying Phoenixes and galloping Unicorns, the sounds of screaming Banshees and whistling Elementals, the ever-changing luminance cycles, and the colourful screens. This is definately an imaginative and well-constructed game. ARCHON will keep you amused for hours in its magical world. I would give it a 9 out of 10 for arcade jockeys; a 7 out of 10 for chess lovers.

C-64 GAMES DESIGN

by John Batchelor

Fifth of a Series
ANIMATION AND SPRITE TECHNIQUES

****

"The games market has almost totally crashed." This is from the Transactor, Vol.5, Issue 3; almost the same words I quoted from Rodney Zaks last month. That issue of the Transactor was devoted to software protection and it convinced me of its major point. You cannot sell many copies of a game with weak protection, and you cannot afford the time or hardware gimmiks to make it less vulnerable. Not to sell at a decent price when your development and advertising costs are already high. No, it seems that games are destined to become a labour of love, after the several hundred already on the market.

****

This month we are talking about sprites and animation techniques. Here are some reccomendations. Use a sprite editor program such as SPRITE MAGIC, Club Disk #20, from the August *Compute Gazette*. Figuring out the binary conversion for POKing in the necessary patterns is a drag and it will tempt you to use fewer shapes than are needed for effective presentation. With an editor you can make minor adjustments to each shape and cycle through the variations to simulate smooth action.

Multicolours are a virtual must; at least for your critical characters. Single colour sprites look too flat for a 3-D effect. You can combine two single colour shapes by using two sprites at once. This overcomes the loss of resolution that multicolour sprites require. However, multicolours are fine most of the time.

They do take careful planning though. I recommend you try for a cartoon look. This means big eyes on big heads on people, animals, and even machines, like cars with eyes. Eyes have whites; therefore, one of your multicolour registers must be white. The other will be pink or black for face and pupil. A cartoon cat could have an orange body with white and black eyes. You could add white paws, a black nose, or some stripes or flecks. A little man can have a pink face and hands with white in his eyes. However his pupils will be the same colour as his clothes, eyes, and hair because only one colour is left. That is the individual sprite colour. If you use black, grey or brown, this os okay. Green or blue can work if you believe in hats. One way to add a fourth colour is to let the background show through in spots, black pupils for instance. But, this prevents you from passing sprites in front of each other or having a fancy background. Of course, you can abandon the white for the eyes, using small dots instead. But remember, unless you use a screen splitting technique all your multicolour sprites must share two colours.

When you manipulate sprites in BASIC, there is no chance that shapes, colours, or locations will be changed while actually being drawn on the screen. But in machine language, you can get some funny effects by changing the registers and pointers on the fly. For example, you can arrange to get more than eight sprites at once. But used carelessly, it may put your rocket ship in two places at once or, worse, break it in the middle.

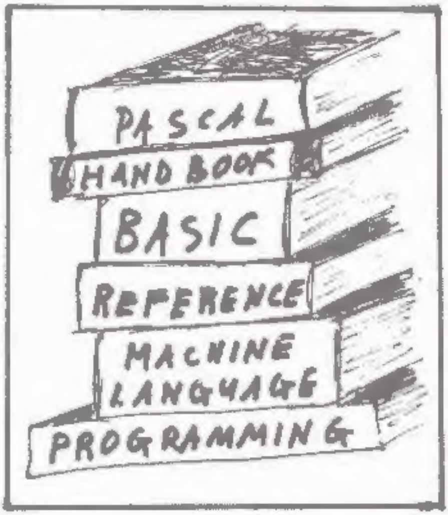
Here are two solutions. You can break into the jiffy (1/60th second) interrupt that services the video chip. Make all your changes before you let the interrupt continue. Or you can use the virtual *registers*. Write an interrupt routine which transfers data from reserved locations into the sprite pointers, usually 2040, 2041, ..., and into the video refisters , 53248, etc. Then you can change the reserved locations whenever you want, but the display will be drawn solidly each time.

One other word of advice; be careful about relying on the collision registers. They are updated only 60 times each second. Two fastmoving sprites may be passed through each other by machine code without having overlapped just when the collision register is being updated. Your eye will smooth the jumps in sprite positions and you will swear that they collided. But the C-64 may have ignored it. Also the collision register does not tell you enough. Normally you check 53278 Bits 0 and 1 to see if Sprite 0 hit Sprite 1. But if Sprite 1 hit Sprite 2 and Sprite 0 hit Sprite 3, then it will appear that the collision took place. You have to check the proximity of the X-Y co-ordinates to be sure. In SPACE-BOX, I had so many false collisions that 53278 became useless. So, I had to check everything by "brute force" each time I moved. That entire game works on interrupts: music, animation, and a paddle check. One BASIC line PEEKs a single location just to see when the game is over.

Obviously I have not covered the fundamentals of animation and sprite design. There are plenty of articles and books on the topic. However, the few tips presented herein may inspire some of you. Some sound and music techniques are slated for next month.

BEGINNERS HINT

Don't store disks too close to the video monitor. It has magnetic field coils.



THE APPLE BOOKSHELF

by Paul Irwin

A visit to your favourite bookstore these days reveals a plethora of Apple books. You can find them at all levels from mickeymouse handholding to machine language references. Topics range from programming to hardware to software catalogues. For any level of most any topic, you can pay your money and take your chances.

If you want to program your Apple, you have the widest choice of all. According to Mr. Murphy's law, you won't be able to pick one on sight; you need a few weeks of work using the book to tell for sure that it is on topic and sensitive to your needs.

Having programmed the Apple from a few non-Apple books and lots of technical articles before these books appeared, I manage to be quite choosy in acquiring my own stash. Here is my choice of what is currently available.

If you have little or no BASIC programming experience, check out *Basic Apple BASIC* by Coan. It covers both Applesoft and Integer BASICs, although you should probably ignore the Integer material on first use. Coan writes to the naiive user without continually talking down; he assumes you are intellegent. The book looks simple, but you will have to work the exercises. Alternate books appear to give you the skills without your having to work. Such books may be entertaining but Coan's exercises are the ones you need to learn how to do it yourself. Published by Hayden, it is widely available.

Next, look at the *Apple II User's Guide*, published by McGraw-Hill. If you have a clone then you may have this one already. It largely replaces the Apple manuals from Cupertino. It has all the data you will probably ever need using your Apple and programming it in BASIC. As one small volume, it is easier to use and cheaper than the Reference, Applesoft, and DOS Manuals.

If you want to program beyond BASIC, you probably will get into machine language and use an Assembler. More books!

As a tutorial, I recommend De Jong's *Apple II Assembly Language*, published by Sams. It meets the needs of software and hardware applications. You get lots of worked Experiments to practice with. They follow clear, simple explanations of programming methods. You can use a Prototyping Board, which is a blank peripheral card, to do the Experiments. Learn the 6502 machine language and how to roll your own peripheral cards from this one well-written book.

Programming the Apple in machine language needs more reference material. The *Apple II Programmer's Handbook*, also published by Sams gives this. Read our review last month. I quote Steve Rimmer from this month's *Computing Now!* magazine: *"... a thick, spiral bound wonder which fairly seethes with information. It has a 6502 programming guide, a guide to useful locations and routines for the Apple, hardware hacks and peripheral things and, of course, acres of code. It's easily the finest thing since the Videx card."* As the author, I blush from modesty as I report this, but the public has The Right To Know.

There are many other books for special interests. If you are serious about hacking the hardware, get Sather's *Understanding the Apple II*, published by Quality Software. From the same publisher comes *Beneath Apple ProDOS*, a must for getting into ProDOS beyond the essential ProDOS manual. Pascal programmers need the Apple manuals - Language System and Pascal - from Apple. A useful aid is Randy Hyde's *p-Source*, published by Datamost.

Stephen Wozinak made the Apple as an open system, published his listings, and worked to make low-level information available. The huge list of publications explaining home computers bears testimony to his success. Read, learn, and enjoy.

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<<< Have a great year! >>>   Ottawa Home Computer Club
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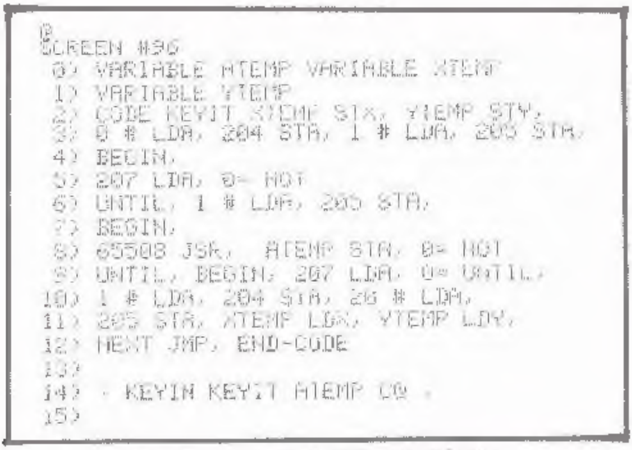

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SCREEN #96
 VARIABLE ATEMP VARIABLE XTEMP
 VARIABLE YTEMP
 CODE KEYIT XTEMP STX, YTEMP STY,
 0 # LDA, 204 STA, 1 # LDA, 205 STA,
 BEGIN,
 207 LDA, 0= NOT
 UNTIL, 1 # LDA, 205 STA,
 BEGIN,
 65508 JSR,  ATEMP STA, 0= NOT
 UNTIL, BEGIN, 207 LDA, 0= UNTIL,
 1 # LDA, 204 STA, 26 # LDA,
 205 STA, XTEMP LDX, YTEMP LDY,
 NEXT JMP, END-CODE

  : KEYIN KEYIT ATEMP C@ ;
```

Blinking cursor GET routine.

Oboy! An Apple. Mongo hungry.

THE MYSTERY OF THE BLINKING CURSOR

by Tony Greenwood

I had been writing a screen editor for my C-64 when I came across the problem. Trying to GET a single character was possible, but without a blinking cursor. So, I looked in my C-64 Memory Map and found that location 204 controlled the blinking. Storing a zero confirmed this by producing the blinking cursor. Great!

Well, not so great. When I incorporated this new blinking GET into my editor the cursor blinked allright, but it also left spurious dirty footprints all over the screen. Sympathetic friends offered a range of advice. None of their good ideas seemed to work. Finally I came across an article that cautioned a wait upon location 207. I fixed my GET routine so that it waited until location 207 became non-zero before switching off the cursor. Aha, breakthrough! No more dirty footprints.

Now, another problem emerged. The cursor blinks on and off again about three times per second. Since the cursor could more much quicker than blink, one could now skip large chunks of screen between blinks if one held the cursor control keys down. One must therefore blink the cursor at each character, I argued. Incororating this logic, by testing to see whether location 207 was non-zero, now resulted in a cursor that crawled across the screen at a snail's pace. In order to speed it up, the blinking cursor was overwritten with a one (1) at appropriate spots. If the cursor was on and should have been off, then only 2/60 second would be required to reverse it. If it was already on the correct blink, then no delay was involved. Success at last.

On reflection, in looking in locations 204, 205, and 207 I must have been very close to 2218 and should perhaps have looked there for a solution. However, it's not on my memory map!

COMMERCIAL WORD PROCESSING

continued from last month

Merge: (not list management)

This is sometimes called list, mailing lists or form letters. There are two major types: sequential and mapped.

Sequential:

Mr. John Brown
123 Forth Street
Ottawa, Ontario
KOA 1A0
Dear Mr. Brown

This type will take the address and put in the first blank in the letter (even in the wrong place). It will put "Dear Mr. Brown" in the next blank. This type will take a lot of duplicate typing for the list of "variables" (name, address, salutation and other information). The variables must be in the same order as they will appear in the final "standard" letter. Be prepared for a series of disaters each time it is used. Even the best, most experienced and careful operator will have to test a sequential merge several times to find al of the errors. The longer the list, the more errors.

Mapped:

Mapped, field oriented, reposition and labelled all refer to the kind of merge that allows you to put what you want, where.

Mr.
John
Browr
123 Forth Street
Ottawa, Ontario
Canaca
KOA 1A0
September 31, 1984

With the above information, "Mr" and "Brown" can be usec for the address and the salutation. It can also be placed in the text if desired. The envelope can also be prepared from the same list. Each piece of information is labelled or numbered to tell the system where to put what information in the standard letter. Most methods require that the operator put the same information in the same order in each address file. Where there is no information, a blank space must be left as if there were information there.

Horror Stories:

Sequential merges! Believe it or not, several major manufacturers expect their customers to believe that this is the best and only merge.

Heaven:

Mapped merges where several files can be tied together. The ability to move from one standard letter to another from inside the variable list. The ability to temporarily view the result before spending several hours printing it out.

Required:

A sheet feed and envelope feed. More operators have gone crazy printing a list manually than on any other word processing job. More bosses have gone bald putting up with deranged operators. Save your sanity -- buy a sheet feed!

Sort (List Management):

There are a few terms that are used in conjunction with sorting and extracting that must be understood. Consider this, when generating an index card file, the person's last name tends to go on the top left corner of the index card followed by their first name. Then the organization they work with either goes below the last name or in the top right hand corner. In the middle on the top is usually the telephone number. All of the information on the index card could be called a "record". The location on the card where the last name is placed, is called a 'field". All of the last names on each card should be in the same place to make finding the last name easier. This is true even of computers. Everything must be in the same place, perfectly!

To sort by the last name means to put all of the index cards into alphabetical order of the last name. Ascending means the "a"s come first and the "z"s comes last.

To extract information by the letter "a" is to say to the computer to show only those last names that start with the letter "a".

The single most important criterion in this options is speed. Speed will make the difference between a report taking a few minutes to generate and many hours to generate. There are three types of sort programs from the operational point of view.

Fixed field:

This type requires all information to be in the same place in each package of information. This can make typing the information difficult to control. Many tests may be required to eliminate all of the errors. Depending on the system, this type of sort can be marginally faster than variable sorting below.

Variable Field:

This type of sorting requires that all information be bounded by special unique characters that tell the system where to start looking for information. The problem here is that the system spends too much time looking for the unique characters.

Keyed:

Keyed sorts involve the machine looking for the information that is to be sorted and taking a "sample" (key). This sample is combined with the "address" of the information and put into a special file. When all of the keys have been sampled, the samples are sorted according to the specified order. The address is then used to retrieve the corresponding package and a new file is created in the order of the sorted "samples".

Comment:

Word processors, especially those full featured systems, are probably the least exploited and most beneficial of all of the different types of computer programs. A good word processor can reduce substantially the costs of operations of an organization. Its strongest position is in helping to generate money. A money saving system does just that, save money, but a system used immaginatively and to its fullest potĕntial will aid the organization to increase its cash flow. As a marketing tool, nothing beats the well presented and professional printed word. The word processor makes this possible more economically than ever before.

The word processor will talk to and transfer material to a typesetter for those printed materials that say "this organization means business". The next time you open a manual, any manual, look at the printing. Does it look like a photocopied rendition from the shipping clerks typewriter? Are you happy that you bought that product? Believe it or not, it is cheaper to typeset manuals (the larger the cheaper) than it is to print typewriten text. With the advent of typesetting lazer printers even inventory of manuals can be reduced to only a few on hand, reducing storage costs and inventory costs.

Another area that word processors are ill used is in the normal office environment. Consider this the next time you are considering a new expensive program. Are you sure you have analyzed your requirements correctly? Why not test it? Full featured word processors can semi-automatically generate most office requirements. This will promote a full understanding of the requirement of the project and how the project will be handled. It will also point out problem areas in the project and areas that require special attention. Most projects when analyzed require number crunching and sorting in different places. Most word processors have some method of selectively retrieving data and automatically executing keystrokes. The interested operator can usually "program" the system to do everything short of making decisions and a few can make simple decisions.

This brings us to the operator. This unsung hero of the office is usually relegated to the position one-half step below the shipping clerk, almost, but not quite, on par with the typist. These people have a tendency to be poorly trained and thrown in to sink or swim. They usually have more bosses than "Carter has liver pills" and usually are dizzy by quitting time from the conflicting instructions. Ready for a shock? The operator is the one individual upon whom the highest authority in the organization should depend on to implement his directives. The operator provides a service and is not subject to the emotions of individual situations in the organization. The operator can be the most supportive individual in an organization ensuring that deadlines are met and that information is accurate. If the president says "no discounts" to his salespeople, does he have the time to scrutinize every quotation that goes out of the office? The operator only eliminates a few keystrokes and the presidents directives are followed. Any argument? Go argue with the president!

conclusion

NOVEMBER MINUTES

by Paul Irwin

President Brian Morrow got things started at 8PM with his update on the industry. Lots of cheap Adams and Ataris this Christmas!

We may have Jim Butterfield address the club next spring. He is the Commodore guru from Toronto, and should be interesting for all to hear.

Both Wayne Schaler and Don White were out of town this month, so we didn't hear their latest plans for the Education program and Bulletin Board. Anyway, both are functioning well, thanks to their efforts.

Dave Schellenberg reported on COMAL language disks. He has several available: tutorial, user group, and *Comal Today* disks. If anyone is interested, get in touch with Dave.

Scotty entertained us with some humourous computer ads. She wore her Apple colours and gave a graphic description of mouse anatomy.

The meeting broke up into the Commodore and Apple groups at 8:30. There was a FORTH group in Room 227 and Dave had COMAL disks in Room 230 with Paul Anderson, the Commodore librarian.

The lectures ran between 9 and 10. The more specific topics appear to be popular; for instance, BASIC INTRODUCTION filled the classroom. Ash Waigh reports fresh interest among the more experienced attending LARGER PROGRAMS. Mike Bryan reports good interest in ARRAYS as he showed how to do a sort. Serge Beaulieu taught LOOPING and Don McLain taught STRINGS.

Next meeting is Dec. 17 at 7:50 ten minutes early because of the Data Base presentations after the business. Come early if you want to pick up disks.

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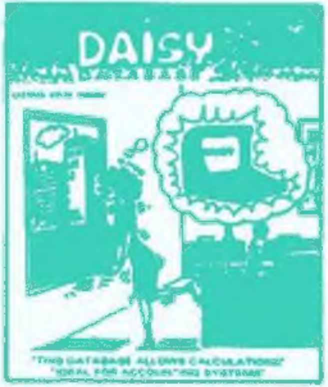
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